

**REMARKS**

The Office Action dated February 25, 2003 has been received and carefully noted. The above amendments and the following remarks are submitted as a full and complete response thereto. By this Amendment, claims 4 and 8 have been cancelled. Claim 6 has been rewritten to be in independent form, and claims 1 and 9 have been further amended to more particularly point out and distinctly claim the invention. Claim 11 has been newly added. No new matter has been added or amendments made that narrow the scope of any elements of any claims. Accordingly, claims 1-3, 5-7 and 9-11 are pending in this application and are submitted for consideration.

Applicants' acknowledge and thank the Examiner for indicating that claim 6 would be allowable over the prior art if amended to be in independent form. By this amendment, claim 6 has been amended. Therefore, it is respectfully submitted that claim 6 is now in condition for allowance.

Claims 1-3 and 7 were rejected under 35 U.S.C. § 102(e) as being anticipated by Yamagishi et al. (U.S. Patent No. 6,300,556, "Yamagishi"). In making this rejection, the Office Action took the position that Yamagishi discloses all the elements of the claimed invention. However, Applicant submits that claims 1-3 and 7 recite subject matter that is neither taught nor suggested in Yamagishi.

Applicant's amended claim 1 recites a solar cell module including a light transmitting member on a front surface side containing at least sodium and a rear surface resin film. A plurality of solar cell elements are sealed with sealing resin between the light transmitting member on the front surface side and the rear surface

resin film. A water transmission preventing layer is between the light transmitting member and the rear surface resin film.

The Office Action took the position that the prior art discloses all of the elements of the claimed invention. However, it is respectfully submitted that the prior art fails to disclose or suggest the structure of the claimed invention, and therefore, fails to provide the advantages of the present invention. For example, the solar cell module of the present invention includes a rear surface resin film and a water transmission layer arranged in a position including at least an interval part between the solar cell elements adjacent each other. As discussed generally in Applicants' specification, a benefit of this claimed configuration is that water entering through the rear surface resin film is blocked.

Yamagishi is directed to a thin film solar cell module that comprises a transparent first electrode layer, a semiconductor layer and a second electrode layer. These layers are deposited on a substrate such as glass and part of the layers are worked by means of a laser beam to thereby partition the layers into a plurality of cells which are then electrically connected with each other. The solar cell module is sealed using ethylene-vinyl acetate copolymer (EVA) thus making it possible to substantially prevent water from penetrating through a peripheral portion of the substrate.

Although Yamagishi appears to disclose a solar cell module, Yamagishi only discloses a rear surface resin. This is inadequate to prevent water leakage. Contrary to this, the present invention includes a separate rear surface resin film and a separate water transmission prevention layer. As recited in Applicants' amended claim 1, the

water transmission preventing layer is between the light transmitting member and the rear surface resin film. This configuration provides sufficient waterproofing.

Therefore, it is respectfully submitted that Applicants' invention, as set forth in claim 1 is not anticipated by Yamagishi within the meaning of 35 U.S.C. § 102.

As claims 2, 3 and 7 depend from claim 1, Applicants respectfully submit that each of these claims incorporate the patentable aspects thereof, and are therefore allowable for at least the same reasons as discussed above.

Claims 1-3 and 7 were rejected under 35 U.S.C. § 102(e) as being anticipated by Kondo (U.S. Patent No. 6,271,053). In making this rejection, the Office Action took the position that Kondo discloses all the elements of the claimed invention.

In the Office Action it was asserted that Kondo discloses all the elements of the claimed invention. However, Applicants respectfully submit that claims 1-3 and 7 recite subject matter that is neither disclosed nor suggested in the prior art.

Kondo discloses a thin film solar battery module having a plurality of unit cells formed on a substrate. The solar cell comprises a tin oxide film 2 formed on a glass substrate made of soda lime glass, an a-Si layer patterned on the oxide film layer, and a protective film 9. In making this rejection, the Office Action asserted that the rear surface resin film 9 also serves as the water transmission preventing layer.

As with Yamagishi, Kondo also only discloses a rear surface resin. However, as discussed above, the present invention includes a separate rear surface resin film and water transmission layer. As recited in Applicant's amended claim 1, the water transmission preventing layer is between the light transmitting member and the rear surface resin film.

Therefore, Kondo also fails to disclose or suggest a solar cell module of the present invention. Thus, it is respectfully submitted that Applicants' invention, as set forth in claim 1 is not anticipated by Kondo within the meaning of 35 U.S.C. § 102.

As claims 2, 3 and 7 depend from claim 1, Applicants respectfully submit that each of these claims incorporate the patentable aspects thereof, and are therefore allowable for at least the same reasons as discussed above.

Claims 1-3, 5, 7 and 8 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the Dran et al. (U.S. Patent No. 4,321,418, "Dran") in view of Yamagishi. In making this rejection, the Office Action took the position that Dran discloses all of the elements of the claimed invention, with the exception of disclosing the presence of sodium in the light transmitting member. Yamagishi is cited for disclosing this limitation. By this amendment, claim 8 has been cancelled. Therefore, the rejection is moot. However, Applicants submit that claims 1-3, 5 and 7 are neither taught nor disclosed by the prior art.

As shown in Fig. 3, Dran discloses a solar photo cell panel 1, which is made up of photo cells 2 electrically connected to conductive strips 3. Photo cells 2 are buried in layer 5, which is a transparent plastic. Layer 5 is disposed between two fluid pipe tight sheets 6 and 7. Layer 5 is enclosed between two flexible thermoplastic sheets 8 and 9.

The Office Action took the position that Dran discloses a fluid-tight sheet 7 formed on a surface of a rear surface resin film 9 and that the fluid-tight sheet 7 covers the interval part between adjacent solar cells 2. But unlike the present invention, the fluid-tight sheet 7 of Dran is not positioned between a light transmitting member and a rear surface resin film, as recited in Applicants' amended claim 1.

Also, Dran discloses that the flexible thermoplastic sheet 9 can be fused respectively to the constitutive material of layer 5 and rigid sheet 7 (column 3, lines 13-16). Therefore, it would not have been obvious to one of ordinary skill in the art to interchange the positions of the flexible thermoplastic sheet 9 and the rigid sheet 7.

Furthermore, with respect to claim 3, Dran does not disclose or suggest that the water transmission preventing layer has a smaller water vapor transmission rate than that of the sealing resin. Although the Office Action states that the fluid-tight sheet 7 can be made of glass, which is asserted to have a transmission rate of 0, the claim states that the water transmission preventing layer has a smaller water vapor transmission rate than that of the sealing resin, not the rear surface resin film.

Still further, Dran also fails to disclose or suggest that the water transmission preventing layer is formed so as to cover the interval part between the solar cell elements, as recited in claim 7.

Thus, the combination of Dran and Yamagishi, either alone or in combination, fails to disclose or suggest the claimed invention. Therefore, it is respectfully submitted that Applicants' invention, as set forth in claim 1, is not obvious within the meaning of 35 U.S.C. § 103.

As claims 2, 3 and 7 depend from claim 1, Applicants respectfully submit that each of these claims incorporate the patentable aspects thereof, and are therefore allowable for at least the same reasons as discussed above.

Claims 4 and 9 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Yamagishi in view of Otani et al. (PG-PUB-2001/0009160, "Otani"). In making this rejection, the Office Action took the position that Yamagishi discloses all the elements of

the claimed invention, except for disclosing the use of an inorganic oxide layer, a nitride layer, or fluoride layer formed on the surface of the rear surface resin film, as recited by claim 4, or that the water transmission preventing layer is the rear surface resin film with the water transmission rate not higher than 6.3 g/m<sup>2</sup> day as recited by claim 9. Otani is cited for disclosing these limitations. By this amendment, claim 4 has been cancelled and claim 9 has been further amended to clarify the invention. Therefore, Applicants respectfully submit that the subject matter of claim 9 is neither disclosed nor suggested by any combination of the prior art.

As stated above, Yamagishi fails to disclose all the elements of the claimed invention. Furthermore, Otani discloses a PET film having a thickness of 6-250  $\mu$  m as the base film 12A in the paragraph [0044]. Although the Office Action asserted that this corresponds to a WVTR of 2.5g/m<sup>2</sup>-day, no support was offered for this position. A WVTR cannot be defined categorically just because it is a PET film of a certain thickness. Besides, the PET film 12A in Otani is one of the components of a transparent high-moistureproof film 12 together with a moistureproof layer 12B and an adhesive sheet 12C. Therefore, it appears that the PET film disclosed in Otani does not have sufficient moistureproofness by itself because it has to be combined with the additional moistureproof layer 12B.

Thus, it is respectfully submitted that Yamagishi and Otani, either alone or in combination, fail to disclose or suggest the claimed invention.

Furthermore, as claim 9 depends from claim 1, Applicants respectfully submit that this claim incorporates the patentable aspects thereof, and is therefore allowable for at least the same reason as discussed above.

Claim 5 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Yamagishi in view of Jansen et al. (U.S. Patent No. 6,077,722, "Jansen"). In making this rejection, the Office Action took the position that Yamagishi discloses all the elements of the claimed invention, with the exception of disclosing that the water transmission preventing layer is a thin plate glass bonded on a surface of the resin film. Jansen is cited for teaching this limitation.

As stated above, Yamagishi fails to disclose or suggest a separate rear resin film and a separate water transmission layer. Thus, it is respectfully submitted that Yamagishi and Jansen, either alone or in combination, fail to disclose or suggest the claimed invention.

Furthermore, as claim 5 depends from claim 1, Applicants respectfully submit that this claim incorporates the patentable aspects thereof, and is therefore allowable for at least the same reason as discussed above.

Claim 8 rejected under 35 U.S.C. § 103(a) as being unpatentable over Yamagishi, in view of Matsushita et al. (U.S. Patent No. 6,222,118, "Matsushita"). By this amendment, claim 8 has been cancelled. Therefore, the rejection is moot.

Claim 10 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Yamagishi, in view of Van Andel et al. (U.S. Patent No. 6,184,075, "Van Andel") and Pollard (U.S. Patent No. 6,184,057), in view of Yamada et al. (U.S. Patent No. 6,113,718, "Yamada") and in view of Pollard (U.S. Patent No. 6,034,322). In making this rejection, the Office Action took the position that Yamagishi discloses all the elements of the claimed invention, except for disclosing that a glass plate having a thickness of 0.005 to 0.1 mm is used as a water transmission preventing layer.

Yamada, Pollard and Van Andel are disclosed in combination for disclosing this limitation.

Firstly, as stated above, Yamagishi fails to disclose or suggest all the elements of the claimed invention. Although the Office Action cited various reasons for combining the above-mentioned references, it is unclear as to why one of ordinary skill in the art would look the three cited references to make the proposed modification other than Applicants' specification. Therefore, it appears that the only reason for making this modification is taken from Applicants' specification, and is thus impermissible reasoning.

Thus, the Applicants respectfully request that the rejection be withdrawn.

Furthermore, as claim 10 depends directly from claim 1, Applicants respectfully submit that this claim incorporates the patentable aspects thereof, and is therefore allowable for at least the same reason as discussed above.

Claim 10 was also rejected under 35 U.S.C. § 103(a) as being unpatentable over Dran in view of Yamagishi, and further in view of Pollard. However, as discussed above, neither Dran nor Yamagishi disclose all the elements of the claimed invention. Pollard fails to rectify the deficiencies.

Furthermore, as claim 10 depends from claim 1, Applicants respectfully submit that this claim incorporates the patentable aspects thereof, and is therefore allowable for at least the same reason as discussed above.

Newly added claim 11 a solar cell module including a light transmitting member on a front surface side containing at least sodium and a rear surface resin film. A plurality of solar cell elements are sealed with sealing resin between the light transmitting member on the front surface side and the rear surface resin film. A water

transmission preventing layer is arranged in a position including at least an interval part between the solar cell elements adjacent each other. The water transmission preventing layer is the rear surface resin film with a water vapor transmission rate not higher than 6.3g/m<sup>2</sup> day.

However, as the cited prior art fails to disclose or suggest that the water transmission preventing layer is the rear surface resin film with a water vapor transmission rate not higher than 6.3 g/m<sup>2</sup> day, Applicants respectfully submit that newly added claim 11 is also patentable over the applied references.

In view of the foregoing, reconsideration of the application, withdrawal of the outstanding rejections, allowance of claims 1-3, 5-7 and 9-11, (claim 6 already indicated as reciting allowable subject matter) and the prompt issuance of a Notice of Allowability are respectfully solicited

If this application is not in condition for allowance, the Examiner is requested to contact the undersigned at the telephone listed below.

In the event this paper is not considered to be timely filed, the Applicants respectfully petition for an appropriate extension of time. Any fees for such an extension, together with any additional fees that may be due with respect to this paper,

may be charged to counsel's Deposit Account No. 01-2300, referencing docket number 107336-00016.

Respectfully submitted,

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Enclosure: Petition for Extension of Time (2 months)